APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,220	03/30/2004	Aravind Yalamanchi	50277-2415	7098

29989 7590 10/26/2006	EXAMINER
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ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		10/815,220	YALAMANCHI, ARAVIND
		Examiner	Art Unit
		Robert Stevens	2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 March 2004_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-41_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-41_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _11 IDS's_.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2.   **Claims 21-40 are rejected under 35 U.S.C. 101** because the claimed invention is directed to non-statutory subject matter.

To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application with useful, concrete and tangible result.

A practical application can be either physical transformation or a useful, concrete and **tangible** result.

The computer readable media as recited in claims 21-40 can be a storage medium as well as a "carrier wave" as described in applicant's disclosure. These particular sections in the disclosure refer to "transmission media." These claims are not patent eligible because they lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material per se.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

4.   **Claims 2-10, 14-15, 17-20, 22-30, 34-35 and 37-40 are rejected under 35 U.S.C. 112,
second paragraph**, as being indefinite for failing to particularly point out and distinctly claim
the subject matter which applicant regards as the invention.

Regarding claim 9: There is a lack of antecedent basis as to lines 1-2 "storing said
expressions in columns of a table".

Regarding claim 2 (line 1 "receiving ... comprises"), **claim 3** (line: 1 "receiving ...
comprises"), **claim 4** (line 2 "detecting ... comprises"), **claim 5** (line 6 "determining
comprises"), **claim 6** (line 4 "determining comprises"), **claim 7** (line 7 "receiving ...
comprises"), **claim 8** (line 1 "detecting ... comprises"), **claim 10** (line 1 "receiving ...
comprises"), **claim 14** (line 1 "performing ... comprises"), **claim 15** (line 1 "performing ...
comprises"), **claim 17** (line 2 "receiving ... comprises, line 8 "determining ... comprises"),
claim 18 (line 2 "receiving ... comprises, line 8 "determining ... comprises"), **claim 19** (line 2
"receiving ... comprises, line 8 "determining ... comprises"), and **claim 20** (line 2 "receiving ...
comprises, line 8 "determining ... comprises"): Each of these claims is improper because each
attempts to over-write or replace a limitation in a parent claim. Note that dependent claims may
add limitations to a parent claim, but my not replace limitations in a parent claim. As such, the
meaning and scope of these claims is vague and indefinite.

Claims 22-30, 34-35 and 37-40 are dependent upon claims 2-10, 14-15, 17-20,

respectively, and therefore are likewise rejected.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   **Claims 1-41 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Reid et al.

(US Patent No. 6,560,592, provisionally filed Mar. 19, 1998 and issued May 6, 2003, hereafter

referred to as "Reid") in view of Detlef Zimmer et al., ("On the Semantics of Complex Events in

Active Databases Management Systems", Proc. of the 15th Int'l Conf. on Data Engineering, Mar.

23-26, 1999, pp. 392-399, hereafter referred to as "Zimmer").

Regarding independent claim 1: Reid teaches *A method for managing expressions in*

a database system, the method comprising the computer-implemented steps of: storing said

expression in a table within said database; (See Reid Figure 8 #13, showing a ruleset stored in a

database) *during a database session, detecting an occurrence of said event by detecting when*

an event occurs that complies with said event structure, and determining whether said

occurrence of said event satisfies any of said conditions; (See Reid Abstract, discussing a

trigger causing evaluation of a premise.) *and if said occurrence of said event satisfies any set of*

one or more conditions, of said conditions, that is associated with one or more corresponding

actions, then causing performance of said one or more corresponding actions. (See Reid

column 4 line 63 – column 5 line 2, in context of the Abstract, teaching a trigger evaluation of a

premise and performance of an action..)

However, Reid does not explicitly teach the limitations as claimed. Zimmer, though,

discloses *receiving an expression that identifies an event structure, one or more related*

conditions and one or more related actions, wherein said event structure defines an event that

corresponds with said event structure;. (See Zimmer page 392 2nd and 4th paragraphs in the

section entitled "1 Introduction", discussing "all information about the event".)

It would have been obvious to one of ordinary skill in the art at the time of the invention

to apply the teachings of Zimmer for the benefit of Reid, because to do so provided a mechanism

for a system designer to process complex events in a database management system, as taught by

Zimmer in the Abstract. These references were all applicable to the same field of endeavor, i.e.,

event processing in database management systems.

Regarding claim 2: Reid teaches object types. (See Reid, Figure 8 #13 in context of

column 16 lines 40-45, discussing objects.)

However, Reid does not explicitly teach the remaining limitations as claimed. Zimmer,

though, discloses *wherein receiving an expression comprises receiving an expression that*

identifies said event structure defined with a set of attributes that describe features of a

corresponding event, and wherein said event structure is represented as an object type in said

database. (See Zimmer page 392 in the 2nd and 4th paragraphs under "1 Introduction" discussing

"all information about the event".)

Regarding claim 3: Reid does not explicitly teach the limitations as claimed. Zimmer,

though, discloses *wherein receiving an expression comprises receiving an expression that*

identifies said event structure as a composite event structure having two or more primitive

events that are each represented, in said database, as an object type embedded in said

composite event structure. (See Zimmer page 395 in the paragraph preceding the "Type and

Order" section, which discusses complex events as consisting of a number of component events.)

Regarding claim 4: Reid teaches the method further comprising the computer-

implemented steps of persistently storing results of said determining in said database. (See Reid,

Figure 8 #13 ruleset and #8 database or disk storage.)

However, Reid does not explicitly teach the remaining limitations as claimed. Zimmer,

though, discloses *wherein detecting comprises detecting an occurrence of a first primitive*

event of said primitive events by detecting when an event occurs that complies with a first

primitive event structure of said composite event structure; wherein determining comprises

determining whether said occurrence of said first primitive event satisfies any of said

conditions; (page 395 1st two paragraphs under "Example 2" discuss a requirement for multiple

events (E_1, E_2, E_3) to occur before E_4.) *detecting an occurrence of a second primitive event of*

said primitive events by detecting when an event occurs that complies with a second primitive

event structure of said composite event structure, determining whether said occurrence of said

second primitive event satisfies any of said conditions, determining whether any of said

conditions are satisfied by both said occurrence of said first primitive event and said

occurrence of said second primitive event, (page 395 1st two paragraphs under "Example 2"

discuss a requirement for multiple events (E_1, E_2, E_3) to occur before E_4.) *and wherein causing*

performance comprises, if said occurrence of said first primitive event and said occurrence of

said second primitive event satisfy any of said set of one or more conditions that have one or

more corresponding actions, then performing said one or more corresponding actions. (page

395 1st two paragraphs under "Example 2" discuss a requirement for multiple events (E_1, E_2, E_3)

to occur before E_4. in context of page 392, 2nd paragraph under "! Introduction" discussing action

execution.)

Regarding claim 5: Reid does not explicitly teach the limitations as claimed. Zimmer,

though, discloses *receiving information that specifies a period for which an occurrence of a*

first primitive event of said two or more primitive events is valid before an occurrence of a

second primitive event of said two or more primitive events occurs; and wherein determining

comprises determining whether said occurrence of said first primitive event and said

occurrence of said second primitive event satisfy any of said conditions in accordance with

said information. (See Zimmer page 395 "Definition 2" section discusses temporal events, in

context of page 395 "Example 2" section's first two paragraphs discussing ordering of events.)

Regarding claim 6: Reid does not explicitly teach the limitations as claimed. Zimmer, though, discloses *receiving information that specifies an order in which to evaluate said conditions with respect to said primitive events; and wherein determining comprises determining, in said order according to said information, whether said conditions are satisfied by said primitive events.* (See Zimmer page 395 "Example 2" section's first two paragraphs discussing ordering of events.)

Regarding claim 7: Reid teaches *wherein receiving an expression comprises receiving an expression that identifies an event structure derived from structure of tables, in said database, that store data that represent event occurrences.* (See Reid, column 28 lines 50-59, discussing table definition file and associated trigger definition.)

Regarding claim 8: Reid teaches *wherein detecting an occurrence of said event comprises detecting that said data is changed.* (See Reid, column 29 lines 10-15, discussing trigger execution upon table update.)

Regarding claims 9-11: Reid teaches *wherein storing said expression in columns of a table comprises storing one or more conditions as an EXPRESSION data type in an EXPRESSION column of said table.* (See Reid, column 30 lines 35-40, discuss exemplary triggers representing SQL-based triggers, it being noted that the specific chosen triggering condition was an obvious variant to one skilled in the art at the time of the invention. See also Figure 8 #13 and #8, showing persistent storage.)

Regarding claim 12: Reid teaches *during a database session, providing access to a database view that comprises a list of event occurrences that have been determined to satisfy any of said conditions, a list of conditions that have been satisfied by event occurrences in said list of event occurrences, and a list of actions that correspond with conditions in said list of conditions*. (See Reid, column 16 lines 40-53, discussing a neural network of rules.)

Regarding claim 13: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *in response to a request from a user of said database system, performing an operation on said view*. (See Zimmer page 395 "Type and Order" section discusses exemplary operations.)

Regarding claim 14: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *wherein performing an operation comprises performing an operation to resolve a conflict among two or more conditions that have been satisfied by event occurrences in said list of event occurrences*. (See Zimmer page 395 last two paragraphs of "Example 2" discuss whether to permit overlapping or concurrent events.)

Regarding claim 15: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *wherein performing an operation comprises performing an operation that includes scheduling an action for performance outside of said database system.* (See Zimmer page 393 "Definition 2" discusses temporal and external event types.)

Regarding claim 16: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *receiving information that specifies that the step of determining is to stop when determining that said occurrence of said event satisfies said set of one or more conditions; and stopping determining whether said occurrence of said event satisfies any of said conditions when determining that said occurrence of said event satisfies said set of one or more conditions.* (See Zimmer page 393 "Definition 6" discusses terminators.)

Regarding claim 17: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *wherein receiving an expression comprises receiving an expression that identifies a temporal condition;* (See Zimmer page 393 "Definition 2" discusses temporal event types.) *wherein said temporal condition specifies that an associated action of the one or more actions is to be performed if a second condition from said set of conditions is satisfied by an occurrence of an event, within a particular time after a first condition from set of conditions is satisfied by an occurrence of an event; and wherein determining comprises determining whether occurrences of events satisfy said first and second conditions in accordance with said temporal condition.* (See Zimmer pages 395-396 "Example 3" teaches complex event types having a specified sequence of event instance, in the context of page 393 "Definition 2" discussing temporal event types.)

Regarding claim 18: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *wherein receiving an expression comprises receiving an expression that identifies a negation condition;* (See Zimmer page 395 "Type and Order" discussing negation operator.) *wherein said negation condition specifies that an associated action of the one or more actions is to be performed if a second condition from said set of conditions is not satisfied by an occurrence of an event within a particular time after a first condition from set of conditions is satisfied by an occurrence of an event; and wherein determining comprises determining whether occurrences of events satisfy said first and second conditions in accordance with said negation condition.* (See Zimmer pages 395-396 "Example 3" discussing a chain of event instances incorporating a negation operation.)

Regarding claims 19-20: Reid does not explicitly teach the limitations as claimed. Zimmer, though, teaches *wherein receiving an expression comprises receiving an expression that identifies a group of conditions that, when a particular number of conditions from said group of conditions is satisfied by one or more occurrences of events, triggers performance of said one or more corresponding actions; wherein said particular number is less than a number of conditions in said group of conditions; and wherein determining comprises determining whether one or more occurrences of events satisfy said particular number of conditions from said group of conditions.* (See Zimmer pages 395-396 "Example 3" discussing a group of event instances.)

Claims 21-40 are substantially similar to claims 1-20, and therefore likewise rejected. It is further noted that Reid discloses the use of at least one processor in Figure 8, showing #1 client and #2 server computers.

Claim 41 is substantially directed to a system for implementing the method of claim 1. As such, claim 41 is substantially similar to claim 1, and therefore likewise rejected.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

US Patent Application Publications

Bhide et al	2005/0125371
Joseph	2005/0010545
Feldman et al	2002/0091685

US Patents

Hellerstein et al	6,697,791
Grindrod et al	6,868,413
Leymann et al	6,826,579

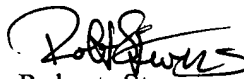## *Contact Information*

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Robert Stevens whose telephone number is (571) 272-4102. The

examiner can normally be reached on M-F 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert Stevens
Examiner
Art Unit 2162

October 11, 2006

SHAHID ALAM
PRIMARY EXAMINER